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COLDFRAMES AND HOT BEDS

An ideal way to increase the yield of your garden is by extending your growing season. If your normal growing season is six months, a three-month extension could provide up to a 50% increase. Coldframes, sun boxes, or hot beds are relatively inexpensive, simple structures that you can build or purchase which provide a favorable environment for growing cool-weather crops in the very early spring, the fall, and even into the winter months.

Cold frames and sun boxes have no outside energy requirements and rely on the sun for their source of heat; whereas hot beds are often heated by soil heating cables, steam carrying pipes, or fresh, strawy manure buried beneath the rooting zones of the plants. Heat is collected by these frames when the sun's rays penetrate through the sash (made of clear plastic or glass). In late spring and summer, excess heat can be reduced by providing some type of shade to the sash. To maximize collection of the sun's rays, the ideal location for the coldframe is a south or southeastern exposure with a slight slope to insure good drainage. A sheltered spot with a wall or hedge to the north will provide protection against winter winds. Ideas which will simplify use of the frame include a walkway to the front of the frame, adequate space behind the

frame to remove the sash, and easy access to plant, weed, water and harvest.

In early spring a coldframe is useful for hardening off seedlings which were started indoors or in a greenhouse. This hardening off period is important as seedlings can suffer serious setbacks if moved directly from the warmth and protection of the house to the garden. Young seedlings need a transition period for gradual adjustment to the outdoor climate. It is also possible to start an extra early cool-weather crop such as lettuce, onions, or spinach and grow it to maturity in the frame for early spring harvest.

Spring and summer uses of the coldframe center around plant propagation. Young seedlings of hardy and half-hardy annuals can be started in a frame many weeks before they can be started in the open. The soil in a portion of the hot bed can be replaced with sand or peat moss or other media suitable for rooting cuttings and for starting sweet potato slips. Some innovative gardeners build lightweight frames that can be lifted and moved from an early spring crop to a more tender crop planted slightly later in the season.

Fall is also a good time for sowing some cool-weather crops in frames.

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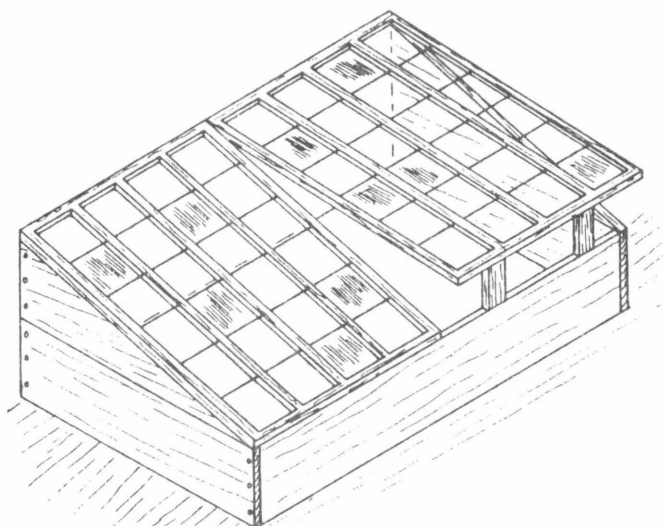
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If provided with adequate moisture and fertilization, most cool-season crops will continue to grow through early winter in the protected environment of a coldframe. Depending on the harshness of the winter and whether or not additional heating is used, your frame may possibly continue to provide you with fresh greens, herbs, and root crops throughout the cold winter months.

The frames can be built from a variety of materials, with wood and cinder-block being the most effective. If wood is selected, use one that will resist decay such as a good grade of cypress. Wood frames are not difficult to build; however, it is also possible to buy kits which can be easily assembled.

There is no standard sized coldframe. The dimensions of your frame will depend on your situation - amount of available space, desired crops, size of available window sash, and permanency of the structure. Remember not to make the structure too wide for weeding and harvesting - 4 to 5 feet is about as wide as is convenient to reach across. The sash of the frame should be sloped slightly to the south to allow maximum exposure to the sun's rays.



STATIONARY COLD FRAME

You may convert your cold-frame to a hot-bed. For a manure heated-bed: 1) dig out area to 2' deep (deeper to add gravel for increased drainage) 2) add an 18" layer of straw horse manure 3) cover with 6" of good soil. For an electric-heated bed: 1) dig out area 2 or 3" deep 2) lay down thermostatically-controlled electric cable in 6-8" long loops, evenly space cable but never crossing itself 3) cover with 2" of sand or soil 4) lay out hardware cloth to protect cable 5) cover with 4-6" of good soil.

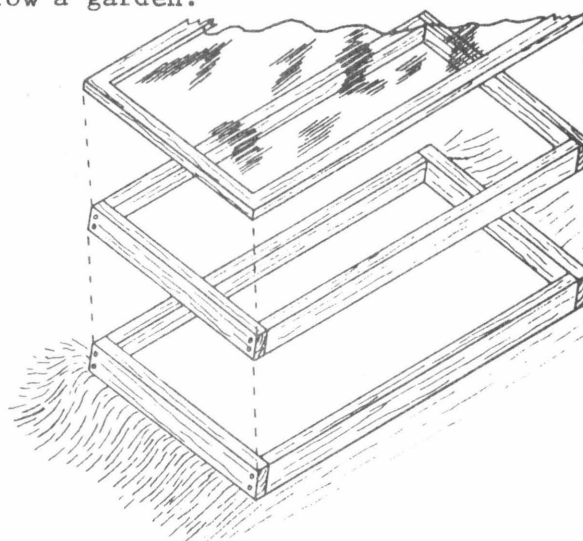
Management of the coldframe is quite simple if a few basic rules are followed.

Insulation may be necessary when a sudden cold snap is expected. A simple method is to throw burlap sacks filled with leaves over the sash on the frame at night to protect against freezing.

Ventilation is most critical in the late winter, early spring, and early fall on clear, sunny days when temperatures rise above 45°F. The sash should be raised partially to prevent the build up of extreme temperatures inside the coldframe. Lower or replace the sash each day early enough to conserve some heat for the evening.

In summer extreme heat and intensive sunlight can be avoided by shading with lath sashes. Watering should be done early in the day so that plants can be dry before dark to help reduce disease problems.

Intensive planting techniques and good management procedures can yield significant harvests from small areas during times of the year when you never thought it possible to grow a garden.



MOVABLE "SUN BOX"